Notes on the Group Gomphoceri and a Key to its Genera, including one New Genus (Orthoptera, Acrididae, Acridinae).

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Knowing that several Old World species which had long been placed in *Gomphocerus* have in recent years been generically separated, we have felt for some time that the relationships of the New World *Gomphocerus clavatus* Thomas should be investigated. With material of the genotypic species of all the genera concerned except *Dasyhippus*, we are now able to state that it belongs to a new genus, nearest the Old World *Aeropus*.

Examination of the only other New World species which has been referred to that genus, shows that the absence of antennae in the unique type misled its author and that it must be recognized as *Scyllinops meridionalis* (Bruner).[1] That genus, described by Rehn in 1927, has nothing to do with the present group but belongs to the Group Scyllinae.

The first species of the Gomphoceri was described in 1758 and the first genus, *Gomphocerus*, in 1815. Additional genera were proposed by Bolivar in a very brief key,[2] those later described[3] or resurrected[4] by Uvarov having been much more satisfactorily treated.

The Gomphoceri are distinguished by the following characters. Lateral foveolae of vertex elongate, visible from above. Face in profile moderately convex, weakly to more strongly retreating, never vertical. Antennae clubbed distad. Pronotal disk with lateral carinae distinct, percurrent or incomplete, more separated caudad than cephalad; its caudal margin obtuse-angulate produced or truncate. Internal spurs of caudal tibiae not or only moderately unequal in length.

The following key separates the genera which are members of this group.

1. Lateral foveolae of vertex strongly impressed. Pronotal disk with lateral carinae moderately to strongly constricted; its caudal margin weakly to moderately obtuse-angulate produced.

[1] This female, from Cuernavaca, Morelos, Mexico, taken January 4, 1899, by C. C. Deam, is in the author's collection.
[2] Trab. Mus. Nac. Cienc. Nat., Ser. Zool., No. 20, p. 61, (1914).
[3] *Dasyhippus*. Eos, VI, p. 357, (1930).
[4] *Aeropus*. Eos, VII, p. 85, (1931).

Organs of flight fully developed to decidedly reduced but overlapping and with dorsal and lateral fields defined. 2.

Lateral foveolae of vertex very weakly defined. Pronotal disk with lateral carinae straight or showing very weak arcuate convergence. Organs of flight represented by ovate pads (attingent in males, separated in females; their costal margin slightly more strongly convex mesad than elsewhere, their venation forming a quite evenly spaced network. All pronotal carinae coarse, the medio-longitudinal cut caudad of a median point by the weak principal sulcus.[5] *Gomphoceridius* Bolivar, 1914. (Genotype, by original designation, *Acridium brevipenne* Brisout, 1848.)

2. Tegmina with costal margin straight; of males showing no fenestration. Size very small. (Organs of flight slightly reduced [usual] to fully caudate. Pronotal carinae fine, the lateral strongly constricted on prozona and often obsolete at point of nearest approach, the medio-longitudinal cut by the principal sulcus slightly cephalad of a median point.)[6] *Myrmelcotettix* Bolivar, 1914.

(Genotype, by monotypy, *Gomphocerus maculatus* Thunberg, 1815.)

Tegmina with costal margin moderately to decidedly lobate just beyond base; of males beyond showing fenestration between mediastine (which is there marginal) and humeral veins. Size larger. 3.

3. Tegmina with costal margin moderately lobate just beyond base; of males showing weak (narrow) fenestration beyond. (Neither pronotum nor cephalic tibiae ever inflated.) 4.

Tegmina with costal margin strongly lobate just beyond base; of males showing strong fenestration beyond. (Prosterum with tubercle varying from prominent to obsolete.) 5.

4. Cephalic tibiae of male normal. Prosternum not tuberculate. (Pronotal lateral carinae moderately constricted, the medio-longitudinal carina cut by the principal sulcus at or near [rarely well caudad of] a median point. Surface, particularly

[5] The antennae are very short, scarcely longer than the combined length of the head and pronotum in males, shorter in females, but in at least one species of the group we know the antennae to vary from elongate in material from temperate areas to very short in material from boreal areas. Added difficulty in properly distinguishing genera based on brachypterous species lies in the fact that reduction in the organs of flight is usually accompanied by reduction in the degree of production of the pronotal disk even in individuals of the same species.

[6] The ovipositor in this genus, as in *Dociostaurus*, is normally carried retracted to the point that only the apices of the dorsal valves are visible. Though used by Bolivar, we do not think it should be given as diagnostic, as the individual is able to protrude the ovipositor and many dried specimens before us, particularly those which have been stuffed, have the ovipositor projecting quite as much as in those of the related genera.

ventrad, more than normally hirsute.) *Gomphocerus* Thunberg, 1815.

(Genotype, indicated by Samouelle, 1819, confirmed by Kirby 1910, *Gryllus Locusta rufus* Linnaeus, 1758.)

Cephalic tibiae of male very slightly incrassate, with long dense hairs on the ventral surface. Prosternum tuberculate (Pronotal lateral carinae moderately constricted, the mediolongitudinal carina cut by the principal sulcus well caudad of a median point.) *Dasyhippus* Uvarov, 1930.

(Genotype, by original designation, *Gomphocerus escalerae* Bolivar, 1899.)

5. Fenestration of male tegmina between mediastine (marginal) and humeral veins very strong, that space much wider than that between any others of the longitudinal veins. Cephalic tibiae of male usually normal, locally faintly to strongly inflated. Prozona of male not to distinctly inflated. (Tegmina [normally] slightly reduced to caudate in males, [normally] decidedly more reduced in females except in *variegatus arcticus*.) *Aeropedellus*, new genus. (Genotype, *Aeropedellus clavatus* (Thomas), originally referred to *Gomphocerus*.)

Fenestration of male tegmina between mediastine (marginal) and humeral veins very strong but no wider than and in most of the forms much narrower than the conspicuously defined and fenestrate intercalated area (which lacks an intercalated vein and is crossed by numerous regular and evenly spaced cross-veinlets). Cephalic tibiae of male very strongly to strongly inflated, pear-shaped. Prozona of male very strongly to decidedly inflated. (Tegmina [normally] slightly reduced to caudate in males and showing very slightly greater reduction in females.) *Aeropus* Gistel, 1848.

(Genotype, by monotypy, *Gryllus Locusta sibiricus* Linnaeus, 1767.)

The group divides naturally into three sections. The first of these includes *Myrmeleotettix;* the second *Gomphocerus* and *Dasyhippus* (which without material appears to us to be very closely related); the third (probably) *Gomphoceridius*, (possibly) *Eclipophleps, Aeropedellus* and *Aeropus*.

Of these latter *Gomphoceridius* is known to include a single brachypterous species which is consequently more difficult to associate, as the form and venation of the tegmina are very important in distinguishing the genera of the group.

The position of *Eclipophleps* Tarbinsky 1927[7] is so uncertain that without material we have considered it best to omit the genus from the above key. The unique female type of *E. bogdanovi* Tarbinsky 1927, from Kobdo, northwestern Mongolia, has the head short and inflated, the eyes very broad, the

pronotum broad with rather strongly convergent lateral carinae, the tegmina represented by pads with rounded apex dorsad, the cephalic limbs thick and short. It is unfortunate that the male is unknown. Nearest this genus may be *Acropedellus*.

Comparison of the new genus *Acropedellus* with *Acropus* shows the latter to represent only a decidedly more specialized development of the same branch, the very unusual features so highly developed in the male sex giving a very different facies, but these same features developed much more weakly locally in males of the species of the former. The very conspicuously fenestrate intercalated area of the male tegmina is, however, a striking feature peculiar to *Acropus*.

To *Gomphoceridius* has been referred only *Acridium brevipenne* Brisout, 1848.

To *Myrmeleotettix* was referred *Gomphocerus maculatus* Thunberg, 1815, by Bolivar in 1914; *Chorthippus antennatus* Fieber, 1853, by Tarbinsky in 1925;[8] *Gomphocerus pallidus* Brunner, 1882, and *Gomphocerus palpalis* Zubovsky, 1900, by Uvarov, Bei-Bienko and Tarbinsky in 1925.

In *Gomphocerus* remain *Gryllus Locusta rufus* Linnaeus, 1758, and *Gomphocerus dispar* Fischer, 1846.

To *Dasyhippus* Uvarov originally (1930) referred *Gomphocerus escalerae* Bolivar, 1899, *Gomphocerus przewalskii* Zubovsky, 1896, *Chorthippus kozhevnikovi* Turbinsky, 1925 and *Chorthippus volgensis* Predtechensky (Zool. Record 1928) and in 1931 Bei-Bienko described *Dasyhippus pygmaeus* and referred to this genus *Chorthippus kozhevnikovi arenosus* Bei-Bienko, 1930.

To *Acropedellus* we assign *clavatus* (Thomas), 1873 (Synonyms of which are *Gomphocerus carpenterii* Thomas, 1874, and *Gomphocerus clepsydra* Scudder, 1875), *variegatus variegatus* (Fischer), 1846 (synonyms of which are *Gomphocerus reuteri* Miram, 1907 (here assigned) and *Gomphocerus similimus* Ikonnikov, 1911) and *variegatus arcticus* here described.[9]

Uvarov assigned to *Acropus* in 1931 *kudia* (Caudell), 1927, *sibiricus sibiricus* (Linnaeus), 1767, and *sibiricus caucasicus*

[7] Ann. Mag. Nat. Hist., XX, p. 495, figs. A to C.

[8] If a member of this genus, a decidedly aberrant one in the more graceful form, very strongly knobbed antennae in males, less convergent pronotal lateral carinae, caudate organs of flight and decidedly more hirsute surface.

[9] The species *variegatus* and *clavatus* may eventually prove to be Old and New World races of a single holarctic species. The condition with inflated male cephalic tibiae has been named *reuteri* for the former and *carpenterii* for the latter. Appearing locally and not occurring over extensive areas inhabited by these insects, this condition, the cause of which is unknown, we believe is a physiological peculiarity which should not be given nominal recognition.

(Motschulsky), 1840, and described *sibiricus graecus*, *sibiricus hispanicus*, *sibiricus pyrenaicus*, *sibiricus helveticus* and *armeniacus*.

The species *Gomphocerus (Stenobothrus) evanescens* Stål, 1860, described from Hong Kong, and *Gomphocerus semicolor* Burmeister, 1838, from Altona, Brazil, are almost certainly not members of the Group Gomphoceri.

(To be continued)

Additional Trypoxylon Names in "Jungle Bees and Wasps of Barro Colorado Island" (Hymen.: Sphecidae).

Significant changes and revisions have lately been made in the genus *Trypoxylon* which will make necessary certain changes of specific names in Chapter V of my "Jungle Bees and Wasps of Barro Colorado Island." Through the work of Richards,* three new species, *Trypoxylon buscki*, *T. atkinsoni* and *T. vagulum*, are added to the list of wasp fauna of the Island.

I sincerely thank Miss Grace Sandhouse for checking and rechecking the *Trypoxylon* material and supplying me with information necessary to make the following additions and corrections.

Pages 151-155. The wasp whose life history is given under the name *Trypoxylon rugifrons*, has been re-identified as *T. fabricator* Sm. [Sandhouse].

Page 156. The name *T. nivcitarse* should be changed to *T. atkinsoni* Richards. The name of *T. cinereum* should be changed to *T. fusipenne* Fab. [Sandhouse], but to make the list complete a paragraph should also be added to the chapter stating that two specimens of *T. cinereum* were taken on the Island in August.

Page 157. The name *T. leucotrichum* Rohwer, is according to Richards, a synonym of *T. palliditarse* Saussure.

Page 158. The *Trypoxylon* wasp referred to under number 7829 is now known as *T. buscki* Richards and No. 7373 is a female of the same species. The wasp referred to as No. 7637 is now known as *T. cornigerum* Cameron [Sandhouse].

Page. 169. The wasp *T.* sp. near *aztecum* proved to be new to science and is now known as *T. vagulum* Richards.

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* The American species of the genus Trypoxylon, Trans. Ent. Soc., London 82: 172-362, 1934.